Source Water Assessment Program (SWAP) Report For A.C. Technology Corporation

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- Inventory land uses within the recharge areas of all public water supply sources;
- Assess the susceptibility of drinking water sources to contamination from these land uses; and
- Publicize the results to provide support for improved protection.

SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Prepared by the Massachusetts Department of Environmental Protection, Bureau of Resource Protection, Drinking Water Program

Date Prepared: July 3, 2001

Table 1: Public Water System (PWS) Information

PWS NAME	A.C. Technology Corporation
PWS Address	660 Douglas Street
City/Town	Uxbridge
PWS ID Number	2304009
Local Contact	Stephen Church
Phone Number	(508) 278-9100

Well Name	*Source ID#*	*Zone I (in feet)*	*IWPA (in feet)*	*Source Susceptibility*
Well #1	2304009-01G	126	433	High

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential sources of contamination including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:
This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contaminant, the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:
1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

1. Description of the Water System

The well for the facility is located on the south of the A.C Technology Corporation building. The well has a Zone I of 126 feet and an Interim Wellhead Protection Area (IWPA) of 433 feet. The well is located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration. Please refer to the attached map of the Zone I and IWPA. The well serving the facility has no treatment at this time. For current information on monitoring results and treatment, please contact the Public Water System contact person listed above in Table 1. A.C. Technology Corporation is required by an Administrative Consent Order (ACO) to connect to the Uxbridge water Department's water main as soon it is constructed, and abandon its source.

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by **the** water supplier and limited to water supply activities.
- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

2. Discussion of Land Uses in the Protection Areas

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.
Key issues include:

1. **Inappropriate Activities in Zone Is;**
2. **Electronics manufacture;**
3. **An Aboveground Storage Tank (AST) with Propane;**
4. **Septic systems;**
5. **Very small quantity Hazardous Waste Generator; and**
6. **Stormwater Catchbasin.**

The overall ranking of susceptibility to contamination for the well is High , based on the presence of at least one high threat land use or activity in the IWPA, as seen in Table 2.

1. **Zone Is –** Currently, the well does not meet DEP's restrictions, which only allow water supply related activities in Zone Is. The facility's Zone I contains buildings, parking areas, and propane tanks. The public water supplier does not own and/or control all land encompassed by the Zone 1. Please note that systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems.

   Recommendations:

- Remove all non-water supply activities from the Zone I to comply with DEP's Zone I requirements.
- If the facility intends to continue utilizing the structures, parking, and tanks in the Zone I, use BMPs and restrict activities that could pose a threat to the water supply.

2. **Electronics manufacturer –** The facility is an electronics manufacturer. They use solvents in their daily manufacturing processes that are potential sources of contamination if spills or leaks occur, or if improperly managed.

   Recommendation:

- Use BMPs to ensure the proper handling and storage of solvents and other hazardous materials.

Table 2: Table of Activities within the Water Supply Protection Areas

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Parking lot			Moderate	Limit road salt usage and provide drainage away from wells
Propane tank	Yes	Yes	Low	Propane storage is considered a low threat to water supplies
Electronics manufacture	Yes	Yes	High	Chemical use
Septic System	No	Yes	Moderate	See Septic System Brochure
Very Small Quantity Hazardous Waste Generator	Yes	Yes	Low	Licensed generator (VSQG). See attached Factsheet
Stormwater drain/ retention basin	No	Yes	Low	See recommendation(s)

*** -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.**

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone II. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

3. **Septic system –** The septic system is located within the IWPA. If a septic system fails or is not properly maintained it could be a potential source of microbial contamination. Improper disposal of household hazardous chemicals to septic systems is a potential source of contamination to the water supply.
   Recommendations:
   - Staff should be instructed on the proper disposal of spent household chemicals. Include custodial staff, groundskeepers, and certified operator.
   - Septic system components should be located, inspected, and maintained on a regular basis. Refer to the appendices for more information regarding septic systems.

4. **Very Small Quantity Hazardous Waste Generator –** Due to their daily operations, very small quantities of hazardous waste are generated. A.C. Technology Corporation has appropriate permits, and they contract with a licensed hauler to remove the hazardous waste off site. Hazardous waste is a potential source of contamination if it is improperly handled or stored.
   Recommendation:
   - Continue to handle hazardous waste in compliance with regulations.

5. **Stormwater drain/catch basin -** Catch basins transport storm water from the roadway and adjacent properties to the ground. As flowing storm water travels, it picks up debris and contaminants from streets, parking areas and lawns. Common potential contaminants include lawn chemicals, pet waste, leakage from dumpsters, household hazardous waste, and contaminants from vehicle leaks, maintenance, washing or accidents.
   Recommendation:
   - Work with the Town to have to the catch basins inspected, maintained, and cleaned on a regular schedule. Additionally, street and parking lot sweeping reduces the amount of potential contaminants in storm runoff

Implementing the following recommendations will reduce the system's susceptibility to contamination.

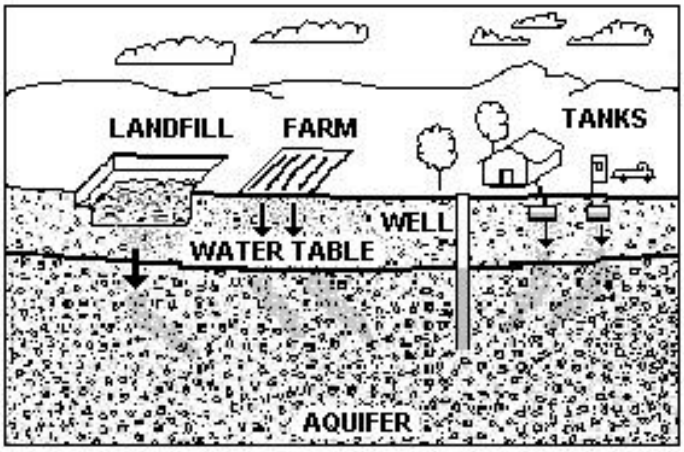

Figure 1: Example of how a well could become contaminated by different land uses and activities.

3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will reduce the well's susceptibility to contamination. A.C. Technology Corporation is commended for posting "Public Drinking Water Supply Recharge Area" signs. A. C. Technology Corporation should review and adopt the key recommendations above and the following:

Zone I:

- Keep non-water supply activities out of the Zone I.
- Remove all non-water supply activities from the Zone I to comply with DEP's Zone I requirements.
- Consider well relocation if Zone I threats cannot be mitigated.
- If it's not feasible to purchase privately owned land within the Zone I at this time, consider a conservation restriction that would prohibit potentially threatening activities or a right of first refusal to purchase the property.

For More Information:

Contact Josephine Yemoh-Ndi in DEP's Worcester Office at (508) 792-7650 x 5030 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on the Drinking Water Program web site at: www.state.ma.us/dep/brp/dws/

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws, including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

Copies of this assessment have been provided to the public water supplier, town boards, the town library and the local media.

- Redirect road and parking lot drainage in the Zone I away from well.

Training and Education:

- Instruct staff on proper hazardous material use, disposal, emergency response, and best management practices.
- Work with your community to ensure that stormwater runoff is directed away from the well and is treated according to DEP guidance.

Facilities Management:

- Implement standard operating procedures regarding proper storage, use and disposal of hazardous materials.

Planning:

- Work with local officials in Uxbridge to include the facility IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.
- Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a potential contaminant threat inventory to assist in setting priorities, focusing inspections, and creating educational activities.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

4. Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Factsheet
- Your Septic System Brochure